Acute Gastric Band Slippage During the 3rd Trimester Gestation

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Laparoscopic adjustable gastric banding (LAGB) is a popular bariatric procedure in South Korea, and the majority of female patients who receive LAGB are of childbearing age. Due to possible band-related complications, careful evaluation is required for those who become pregnant after LAGB procedures. A 28-year-old female, gravida 1, para 0, who had undergone LAGB two years earlier presented to the clinic at the 31st week of gestation. She had experienced acute epigastric pain and vomiting for one week. She was diagnosed with gastric band

slippage. She underwent cesarean section and laparoscopic gastric band removal at the 35th week of gestation. Management of gastric band slippage during the third trimester is difficult, especially before the 34th week of gestation. We report on a case of medical and surgical treatment of gastric band slippage during the third trimester.

Key words: Bariatric surgery, Complication, Laparoscopy, Pregnancy

INTRODUCTION

Laparoscopic adjustable gastric banding (LAGB) is a commonly performed bariatric procedure in South Korea. LAGB is a restrictive surgical procedure which has a low morbidity and mortality rate in the immediate postoperative period along with a good weight loss.^{1,2} LAGB is also known to have contributed in decreased occurrence of obesity-related gestational complications in young female patients.³ Nevertheless, we occasionally meet complications such as gastric band slippage, band erosion, and gastric pouch dilatation. Especially, acute gastric band slippage during pregnancy requires a critical management for the health of fetus and mother. We report a case of LAP-BAND AP[®] (Allergan, Irvine, CA, USA) slippage during 31st week of gestation, which was medically and surgically managed.

CASE REPORT

A 28-year-old female, gravida 1, para 0, at 31st week of gestation, presented to our outpatient clinic with a history of epigastric pain, vomiting, and 10 kg of weight loss in one week. This patient had undergone LAGB (LAP-BAND AP[®]) procedure for severe obesity at a local clinic 2 years earlier. At the

time of LAGB, her weight was 86 kg with a body mass index (BMI) of 32.8 kg/m². She had a co-morbid condition of hyperlipidemia. In the postoperative period, her lowest recorded weight was 63 kg with a BMI of 24.0 kg/m² at 11 months. She became pregnant 17 months following the LAGB procedure. She did not regularly follow-up at the local clinic and had not undergone deflation of the band. She had an uneventful course until the 2nd trimester. She had 19 kg of weight gain during pregnancy, and her weight was 82 kg with a BMI of 31.2 kg/m² at 29th week of gestation. At that time, she was experiencing severe epigastric pain and vomiting. Gastric band was completely deflated, however, her symptoms did not subside. She was diagnosed with band slippage confirmed by fluoroscopy at the local clinic and was transferred to our hospital. She was alert and afebrile. The vital signs were stable at the time of transfer. Her weight was 72 kg with a BMI of 27.4 kg/m² at the time of transfer due to postprandial emesis. She did not have abdominal tenderness or signs of peritoneal irritation. The fetal heart rate was within normal limits. There was no pre-term labor. However, the laboratory tests at admission were abnormal. White blood cell count was 4,600/ul. Serum sodium level was 136 mEq/L, potassium level 2.2 mEq/L, blood urea nitrogen level 39 mg/dl, creatinine level 1.8 mg/dl, aspartate aminotransferase level 486 IU/L and alanine transaminase level 651 IU/L. Patient was admitted for the management of electrolyte imbalance and weight loss. Intravenous fluids were started. Chest simple x-ray showed O-shaped configuration of the slipped band (Fig. 1). However, due to patient's electrolyte imbalance and 31st week of gestation status, surgical removal of the slipped band was suspended. The patient was started on nothing by mouth and peripheral total pa-

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Fig. 1. Chest X-ray showing enlarged proximal gastric pouch and O-shaped configuration of the slipped gastric band (black arrow).

renteral nutrition. Neo-minophagen C was started for the purpose of hepatic function recovery. Intravenous anti-emetics and proton pump inhibitors (pantoprazole) were administered. Tocolytics were not used prophylactically because no pre-term labor was present. Two weeks later, the patient was discharged home after laboratory tests normalized due to special Korean medical insurance state. However, the patient was re-admitted 5 days later due to epigastric discomfort and vomiting. Emergency cesarean section and laparoscopic removal of the band were planned as she was at 35th week of gestation. As the first procedure, cesarean section was performed. The newborn was 2,180 g and healthy. Then an incision was made at the previous trocar site in the supra-umbilicus, and the tubing was disconnected. Exploration of the abdominal cavity showed LAP-BAND AP[®] in lower position of the stomach and a severely enlarged gastric pouch (Fig. 2). The stomach was emptied using a nasogastric tube. Surrounding adhesions were dissected with a hook cautery. The buckle of the band was identified and released, and band was removed. Additional adhesions were taken down to reduce the slipped portion of the stomach. Nasogastric tube was removed after suction and irrigation of the enlarged proximal stomach. A closed suction drain was placed. The patient had an uneventful postoperative course. She was discharged on postoperative day 6.

DISCUSSION

LAGB is known to be one of the safest bariatric procedures

Fig. 2. Diagnostic laparoscopy showing severe dilatation of the proximal gastric pouch.

in the peri-operative period. However, the number of LAGB cases has sharply decreased due to long-term complications of the band itself (gastric band slippage, gastric band erosion, gastric pouch dilatation, port and tubing system problems) and high re-operation rate.⁴⁻⁶ According to a meta-analysis by Singhal et al., the mean rate of gastric band slippage was 4.9%.⁷ Although posterior band slippage rate has decreased due to the development of Pars Flaccida technique,² the occurrence rate of anterior band slippage has not changed.

The reduction in nutritional intake from an inflated gastric band might have adverse consequences. Therefore, appropriate weight regain following LAGB is most important to reduce the maternal gestational complication in pregnancy. Until now, there is no consensus on management of the gastric band in pregnancy. Some doctors advocate deflation of the gastric band during pregnancy allowing sufficient intake of nutrients to allow for fetal growth and development and reducing the risk of band complications.⁸ Another doctor proposed deflation of the gastric band in 1st trimester, and inflation of the gastric band in 2nd or 3rd trimester.⁹ Pregnant women in 1st trimester occasionally experienced hyperemesis, which might aggravate the band related complications including slippage. Therefore, we recommend deflation of the gastric band in this period. Generally, nausea and emesis during pregnancy resolve with the removal of fluid in the band system. However, if the symptoms continue, the obstetrician and the bariatric surgeon have to differentiate physiologic features from slippage of the band. Most simple diagnostic tool is chest and abdomen X-ray. Upper endoscopy may be utilized as well to avoid the untoward effects of fetal radiation exposure in the 1st trimester.

The guidelines of the Society of American Gastrointestinal and Endoscopic Surgeons can be helpful when we choose a laparoscopic approach during pregnancy.¹⁰ Laparoscopic surgery in

the 3rd trimester is feasible and can be performed safely in general if any other special obstacle is not present. Especially, laparoscopic band removal at acute band slippage is the treatment of choice in the 3rd trimester.

With the increasing number of LAGB procedures performed in the child-bearing age patients, the obstetrician and the surgeon have to cope with potential complications including acute gastric band slippage. In the case of acute band slippage during pregnancy, bariatric surgeon should not hesitate a laparoscopic approach.

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